

# Fifth disease

**Fifth disease** or **fifth childhood disease** ( **erythema infectiosum** ) is a viral infectious disease caused by *parvovirus B19* . It is transmitted by droplets and affects children more often than adults.

It usually manifests within 14 days of infection, symptoms are mild and include fever, nasal discharge, headache and a rash that may be itchy. Slapped cheeks may appear on the face. The rash is mainly on the trunk, arms, buttocks, thighs and usually disappears within 7-10 days. Sometimes the disease is also accompanied by pain and swelling of the joints (polyarthropathy), especially in the hands, feet or knees. Patients are most contagious at the beginning of the infection, when exanthema or polyarthropathy develops, they are no longer infectious.

It is usually a minor disease, but sometimes it can lead to the development of chronic anemia. The infection is also transmitted through blood (from the pregnant woman to the fetus) and blood derivatives. Treatment is only symptomatic, there is no vaccination. Lifelong immunity against parvovirus B19 usually remains after infection. Fifth disease can have a serious course in people with a weakened immune system, for example with leukemia, oncological disease, after an organ transplant or with HIV infection.<sup>[1]</sup>

## Epidemiology

It appears most often in **spring**, the frequency is also higher **in winter**. Transmission most often occurs through **droplets** from the respiratory tract, but also through blood and blood derivatives. **Vertical** transfer of blood from the pregnant woman to the fetus is also possible . Parvovirus can cause severe fetal anemia - asphyxia, fetal hydrops , and rarely fetal death from severe anemia.

Parvovirus B19 **attacks the precursors of the red blood cell**, so it can cause an aplastic crisis in patients with chronic hemolytic anemia (e.g. G6PD deficiency ) or immunodeficiency <sup>[2]</sup>. To a lesser extent, it also attacks the endothelium, fetal monocytes, penetrates the skin and joints.

The disease leaves long-term immunity.

## Clinical signs

Fever<sup>[3]</sup><sup>[4]</sup> , headache , myalgia . After about a week, a **maculopapular rash** appears - first on the face (" *slapped cheek disease*<sup>[5]</sup>"), from where it spreads over the trunk to the limbs, where it forms a net-like pattern. The rash can be localized on the palms and soles of the feet (" *gloves and socks syndrome*<sup>[5]</sup>"). **Variability of exanthema intensity** according to external conditions (heat, cold)is typical.<sup>[5]</sup>

Various **complications** can occur , e.g. arthritis, myocarditis, hepatitis, neuropathy, encephalopathy<sup>[5]</sup>. In some individuals, the disease can occur without external manifestations, **asymptomatically**.

## Diagnosis

The etiology will be confirmed **by the isolation of the virus** or the **detection of specific antibodies**.<sup>[5]</sup>

## Therapy

Treatment is **symptomatic**. In an aplastic crisis, blood transfusions are given, and in patients with severe immunodeficiency, **even immunoglobulins**.<sup>[5]</sup>

## Links

### External links

- Pediatrie pro praxi: Virové exantémy dětského věku (<http://www.pediatriepropraxi.cz/pdfs/ped/2008/06/03.pdf>)
- Pediatrie pro praxi: Infekční exantémová onemocnění v dětském věku (<http://www.pediatriepropraxi.cz/pdfs/ped/2009/03/09.pdf>)

## References

[2] [5]

1. Centers for Disease Control and Prevention. *NATIONAL CENTER FOR IMMUNIZATION AND RESPIRATORY DISEASES : Parvovirus B19 and Fifth Disease* [online]. The last revision 2015-11-02, [cit. 2018-08-07]. <<https://www.cdc.gov/parvovirusb19/fifth-disease.html>>.
2. LISSAUER, Tom - CLAYDEN, Graham. *Illustrated Textbook of Paediatrics*. 3. edition. Spain : Elsevier, 2007. pp.

226. ISBN 978-07234-3398-9.
3. SERVEY, Jessica T – REAMY, Brian V – HODGE, Joshua. Clinical presentations of parvovirus B19 infection. *Am Fam Physician* [online]. 2007, vol. 75, no. 3, p. 373-6, Available from <<https://www.ncbi.nlm.nih.gov/pubmed/17304869>>. ISSN 0002-838X..
  4. BEHRMAN, Richard E – KLIEGMAN, Robert. *Nelson textbook of pediatrics*. 17th edition. Philadelphia : Saunders, 2004. ISBN 0721695566.
  5. BENEŠ, Jiří, et al. *Infectious Medicine*. 1st edition. Galén, 2009. 651 pp. pp. 166, 167. ISBN 978-80-7262-644-1.

## Literature

- BENEŠ, Jiří, et al. *Infectious Medicine*. 1st edition. Galén, 2009. 651 pp. pp. 166, 167. ISBN 978-80-7262-644-1.
- LISSAUER, Tom – CLAYDEN, Graham. *Illustrated Textbook of Paediatrics*.. 3rd edition. Spain : Elsevier, 2007. pp. 226. ISBN 978-07234-3398-9.